

Work Order ID 87209

July-11-12 10:21:18 AM

\*87209\*

Page 1

Item ID: D3689-1

Accept

\*N900040100\*

Setup Start

\*NS1\*

Revision ID:

Stop

\*NS2\*

Item Name: SLEEVE

Start Date: 7/10/12

Start Qty: 10.00

\*10\*

Cust Item ID:

Required Date: 8/24/12

Req'd Qty: 10.00

\*10\*

Customer:

Reference:

Approvals:

Process Plan: MLJ

Date: 12/07/12 Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run Start

\*NR1\*

Stop

\*NR2\*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
<b>Draw Nbr</b>	<b>Revision Nbr</b>								
D3689	Rev B								
100	DOOSAN LATHE	0.00							DAS 04 9-89
<b>*100*</b>									
Doosan	Memo	0.00		13-3-11		10	4		
Doosan Lathe	1-Turn as per Folio FA722 Rev: <u>4A</u> & Dwg D3689 Rev: <u>B</u> 2-CHECK THREAD WITH GO-NO GO GAUGE DT9450 A & B 3-Deburr per dwg D3689								
110	QC2- Inspect parts off machine FAI/FAIB	0.00							DAS 04 9-89
<b>*110*</b>									
QC	Memo	0.00		13-3-11		10	4		
Quality Control									
120	CONVENTIONAL MILLING MACHINE	0.00							
<b>*120*</b>									
Mill Conv	Memo	0.00		MJP 13/03/13		10			
Conventional Milling Machine	C'sink .188" holes as per dwg D3689								

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



W/O:		WORK ORDER CHANGES					
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**NOTE:** Date & initial all entries

July-11-12 10:21:18 AM

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[illegible]

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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**NOTE:** Date & initial all entries

# Work Order ID 87209

**\*87209\***

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July-11-12 10:21:18 AM

Item ID: D3689-1

Accept

**\*N900040100\***

Setup Start **\*NS1\***

Revision ID:

Stop **\*NS2\***

Item Name: SLEEVE

Start Date: 7/10/12

Start Qty: 10.00

**\*10\***

Cust Item ID:

Required Date: 8/24/12

Req'd Qty: 10.00

**\*10\***

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run Start **\*NR1\***

Stop **\*NR2\***

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Tool ID

Tool #

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

190

QC21- Final Inspection - Work Order Release

0.00

**\*100\***

QC

Memo

0.00

Quality Control

13/4/13

13-04-4

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



# Picklist Print

July-11-12 10:21:18 AM

Page 1

Work Order ID: 87209

Parent Item: D3689-1

Parent Item Name: SLEEVE

Start Date: 7/10/12

Required Date: 8/24/12

\* Start Qty: 10.00

Required Qty: 10.00

Comments: IPP Rev:A New Issue 08-02-11 JLM Verified By:EC  
 IPP Rev:B Material Change 09-01-07 JLM Verified By:EC  
 IPP Rev:C Add note on material cutting JLM Verified By:JM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M174PH-H900R1.375		Purchased	No			100	f	64.5007	0.5	5.263158			
17-4 SS H900 ROUND BAR 1.375													

Location

Loc Qty

Loc Code

MAT030

64.5007

111123

12.7507

121280

27.75

121918

24

123446

3.511

B-3-11 04 9-89

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

DART AEROSPACE LTD		Work Order:	87209
Description: Sleeve		Part Number:	D3689-1
Inspection Dwg: D3689	Rev: B	Page 1 of 1	

### FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article ☐ Prototype

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
1.90	+/-0.030	1.875	/	/	29.2	
Ø0.768	+/-0.010	.760	/	/		
Ø0.063	+0.005/-0.001	.062	/	/		
R0.06	+/-0.030	.03	/	/		
3/4-16UNF-2B	N/A		/	/		
0.035 x 45°	+/-0.010 x 0.5°	.635 x 45°	/	/		
1.5	+/-0.030	1.486	/	/		
1.35	+/-0.030	1.35	/	/		
Ø0.188	+0.005/-0.001	.187	/	/		
90°	0.5°	90°	✓			
Ø0.250	+/-0.010	0.260	✓		MJP-04	VER 11
Ø1.075	+0.000/-0.015	1.068	/	/		
1.13	+/-0.030	1.131	/	/		
4.00	+/-0.030	4.008	/	/		

MJP

Measured by:	104
Date:	13.3.11

Audited by:	am
Date:	13/03/30

Prototype Approval:	N/A
Date:	N/A

Rev	Date	Change	Revised by	Approved
A	09.05.11	New Issue	KJ	AG

NCR: Yes / No

**WORK ORDER NON-CONFORMANCE / UPDATE**

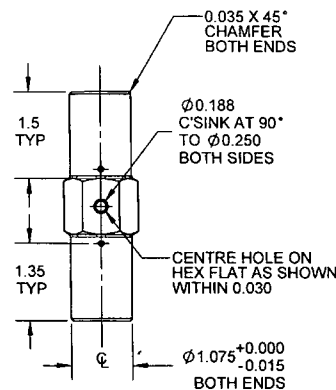
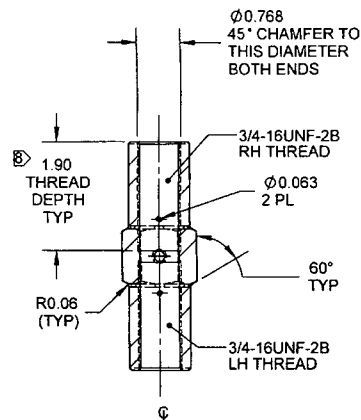
DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

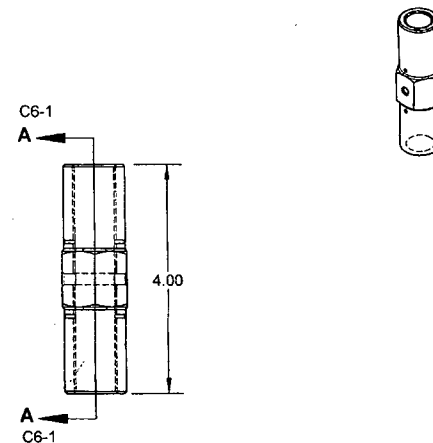
Work Order: _____  Part No. _____  NCR No. _____				<b>DISPOSITION</b>  Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>		<b>AGAINST DEPARTMENT/PROCESS</b>  <div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/>            Machining <input type="checkbox"/>            Thermoforming <input type="checkbox"/>            Large Fab <input type="checkbox"/> </div> <div>           Crosstube <input type="checkbox"/>            Small Fab <input type="checkbox"/>            Finishing <input type="checkbox"/>            Composite <input type="checkbox"/> </div> <div>           Water Jet <input type="checkbox"/>            Prod. Eng. Coord. <input type="checkbox"/>            Rec/Store/Packaging <input type="checkbox"/>            Supplier <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/>            Quality <input type="checkbox"/>            Other <input type="checkbox"/> </div> </div>					
<b>Root Cause</b>	<b>Date</b>	<b>Step</b>	<b>Qty</b>	<b>Description of work order update or Non-conformance</b>	<b>Initial Chief Eng</b>	<b>Action Description</b>	<b>Sign &amp; Date</b>	<b>Verification</b>	<b>QC Inspector</b>		
Doc/Data <input type="checkbox"/>											
Equip/Tooling <input type="checkbox"/>											
Operator <input type="checkbox"/>											
Material <input type="checkbox"/>											
Setup <input type="checkbox"/>											
Other <input type="checkbox"/>											
Process <input type="checkbox"/>											
Supplier <input type="checkbox"/>											
Training <input type="checkbox"/>											
Unapproved <input type="checkbox"/>											
<b>FAULT CATEGORY</b>											
<b>Landing Gear</b> <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric to O/S <input type="checkbox"/> Cracks <input type="checkbox"/> Crushed/Crimped. <input type="checkbox"/> Cuffs <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Ripples in Bend <input type="checkbox"/> Torque Waves in Extrusion <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube			<b>General</b> <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damaged <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drill Holes <input type="checkbox"/> Drawing <input type="checkbox"/> Finish <input type="checkbox"/> Folio			<input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Maintenance <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Offset <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions			<input type="checkbox"/> Ovalized <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge  <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled  <input type="checkbox"/> Other		

SHOP COPY  
RETURN TO  
ENGINEERING  
UNCONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER  
NO. 81731 MLJ  
12/03/19

**SECTION A-A**  
D3-1



**D3689-1 SLEEVE**



**RELEASED**  
08/12/15 MLJ

- NOTES:**
- 1) MATERIAL: 17-4PH STAINLESS STEEL ROUND BAR PER AMS 5643 H-900 CONDITION
  - 2) FINISH: NONE
  - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
  - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
  - 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
  - 6) IDENTIFICATION: NONE
  - 7) WEIGHT: 0.67 lb
  - 8) DIMENSION SHOWN IS MINIMUM DEPTH OF FULL THREAD
  - 9) LPI PER ASTM 1417 LEVEL 2

B	CHANGE TO 17-4PH H-900 (ZN A8-1); REFORMATTED TO CURRENT DWG STANDARDS	RF	08.11.24
A	NEW ISSUE	RF	08.05.22
REV.		BY	DATE
DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	<u>91</u>	DRAWING NO.	REV. B
MFG. APPR.	<u>91</u>	D3689	SHEET 1 OF 1
APPROVED	<u>91</u>	TITLE	SCALE
DE APPR.	<u>91</u>	SLEEVE	NTS
DATE	08.11.24	COPYRIGHT © 2008 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



## LIQUID PENETRANT TEST REPORT

P- 12156

CLIENT  
ATTENTION  
ADDRESSDart Aerospace  
Charlotte Linda, Andy  
1270 Aberdeen St  
Hawkesbury, on

DATE

April 2 2012

PAGE 1 OF 1  
TIME AM ☒ PM ☐

ACUREN JOB NO.

188-13-C0233

PO/NO.

WORK LOCATION

As Address

ACCEPTANCE STD.

ASTM 1417/2007

REV./DATE 2005

PROJECT  
ITEM(S) EXAMINEDPt - wet Fluorescent Liquid penetrant Inspection  
- See Below

## JOB DESCRIPTION

PROCEDURE NO. LT-002 REV./DATE 2009

TECHNIQUE NO. LT-002XX REV./DATE 2009

PART NO.

MATERIAL Aluminium / s/s THICKNESS N/A

SCOPE

Performed a wet Fbo L.P.I on 100% of the external surface on Items mentioned below.

## TEST DETAILS

METHOD	<input checked="" type="checkbox"/> FLUORESCENT	<input type="checkbox"/> VISIBLE	<input type="checkbox"/> WATER WASH	<input type="checkbox"/> SOLVENT REMOVABLE	<input type="checkbox"/> POST EMULSIFIED
FAMILY BRAND	MagnaFlux		BLACK LIGHT S/N	13790	<input type="checkbox"/> OUTPUT > 1000 $\mu$ W/cm <sup>2</sup> <input type="checkbox"/> AMBIENT < 2 fc
PENETRANT	ZL-67	MINIMUM DWELL TIME	45	MIN.	LIGHTING EQUIP. <input type="checkbox"/> FLASHLIGHT <input type="checkbox"/> TROUBLELIGHT <input type="checkbox"/> OUTPUT > 100 fc @ SURFACE
PENETRANT REMOVER	H2O	MINIMUM DRY TIME	> 10	MIN.	OTHER
DEVELOPER	SKD-52	MINIMUM DWELL TIME	20	MIN.	LIGHT METER S/N 1092866 CAL DUE DATE Oct 2013
DEVELOPER TYPE	<input checked="" type="checkbox"/> NON AQUEOUS	<input type="checkbox"/> AQUEOUS	<input type="checkbox"/> DRY		

## TEST SURFACE

SURFACE CONDITION	<input type="checkbox"/> AS GROUND	<input type="checkbox"/> AS WELDED	<input checked="" type="checkbox"/> MACHINED	<input type="checkbox"/> SHOT BLASTED	<input checked="" type="checkbox"/> CLEAN BARE METAL
SURFACE TEMPERATURE	<input type="checkbox"/> < - 4°C/ 20°F	<input type="checkbox"/> - 4°C/ 20°F to 10°C/50°F	<input checked="" type="checkbox"/> 10°C/50°F to 52°C/125°F	<input type="checkbox"/> > 52°C/125°F	

## RESULTS-

☐ METRIC ☐ IMPERIAL

ITEM	COMMENTS	ACCEPT	REJECT
1	Cross tube Mid Fuel, Blue, w.o ID 96873	✓	
2	Cross tube Mid Fuel Blue, w.o ID 96874	✓	
3	Cross tube Mid Fuel Blue, w.o ID 98132	✓	
4	Cross tube Mid Fuel Blue, w.o ID 98133	✓	
5	30x sleeve, w.o ID 81731	✓	
6	10x sleeve, w.o ID 87209	✓	
7	10x sleeve, w.o ID 98784	✓	

Item ID D206-667-107 BL  
Item ID D206-667-107 BL  
Item ID D206-667-107 BL  
Item ID D206-667-107 BL  
Item ID D3689-1  
Item ID D3689-1  
Item ID D3689-1

No Relevant Indications was detected As per applicable standard at the time of Inspection.

## Scope of Services

The agreement of Acuren Group Inc. to perform services extends only to those services provided for in writing. Under no circumstances shall such services extend beyond the performance of the requested services. It is expressly understood that all descriptions, comments and expressions of opinion reflect the opinions or observations of Acuren Group Inc. based on information and assumptions supplied by the owner/operator and are not intended nor can they be construed as representations or warranties. Acuren Group Inc. is not assuming any responsibilities of the owner/operator and the owner/operator retains complete responsibility for the engineering, manufacture, repair and use decisions as a result of the data or other information provided by Acuren Group Inc. In no event shall Acuren Group Inc.'s liability in respect of the services referred to herein exceed the amount paid for such services.

## Standard of Care

In performing the services provided, Acuren Group Inc. uses the degree, care and skill ordinarily exercised under similar circumstances by others performing such services in the same or similar locality. No other warranty, expressed or implied, is made or intended by Acuren Group Inc.

## SIGNATURES

CLIENT REPRESENTATIVE	Andy Sheldon	PRINT	ASheldon	SIGNATURE	DTR # E-120397
TECHNICIAN (SIGNATURE):	Alexandre McHAUD	1 <sup>st</sup> TECHNICIAN		2 <sup>nd</sup> TECHNICIAN	REPORT REVIEWED BY:
NAME (PRINT):	Alexandre McHAUD	CGSB LEVEL 2	SNT LEVEL 2	CGSB LEVEL	SNT LEVEL
	CGSB REG. No 10140			CGSB REG. No	

WHITE - CLIENT COPY

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GOLD - OFFICE COPY